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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/651,523	08/29/2003	Steven K. Reinhardt	42P15451	8550

8791 7590 02/28/2007
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EXAMINER

LE, DIEU MINH T

ART UNIT	PAPER NUMBER
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2114

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	02/28/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary	Application No.	Applicant(s)	
	10/651,523	REINHARDT ET AL.	
	Examiner	Art Unit	
	Dieu-Minh Le	2114	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 22 November 2006 and 06 February 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-27 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-27 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 29 August 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|--|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input checked="" type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date <u>2/06/07</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. This Office Action is in response to the amendment filed 11/22/2006, 02/06/07 and the interview on 02/06/07 in application 10/651,523.
2. Claims 1-27 are again presented for examination.
3. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.
4. Claims 1-27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bossen et al. (U.S. 6,058,491 hereafter referred to as Bossen) in view of Fleming et al. (U.S. 6,023,772 hereafter referred to as Fleming).

This rejection is being applied for the same reasons set forth in the previous Office Action mailed 08/22/2006.

As per claims 1-27 see the previous office action for the detailed teaching of Bossen and Fleming as well as the reasons and motivation for combined.

Applicant asserts that Bossen and Fleming failed to teach or suggest the following:

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- a. the checkpoint;
- b. re-executing the non-deterministic events.

Examiner respectfully transverses Applicant's argument as follows:

a. First, Examiner would like to bring Applicant attention to Bossen's method and system for fault handling to improve reliability of a data processing system having leading and lagging processes via computing processing [abstract, fig. 3, col. 1, lines 1-12 and col. 3, lines 30 through col. 4, line 10]. Bossen explicitly demonstrated the checkpoint capability that performs applicant's "determining whether an processing error has occurred subsequent to the storage of the first checkpoint" limitation [col. 2, lines 1-4; col. 3, lines 20-30; col. 8, lines 25-45; col. 10, claim 10]. Furthermore, Bossen illustrated the *fault/error detection and correction processes via processing loading operation, executing, timing, retrying, synchronizing, check-pointing, state information retrieval, comparison, resetting, and re-executing operations* in supporting the fault-tolerant/ hardware failure and recovery process [fig. 3, col. 3, lines 20-30; col. 5, lines 50-58; col. 5, lines 60-67; col. 6, lines 63-67; col. 7, lines 19-60]. This

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is very obvious to an ordinary skill in the art to realize that Bossen does perform data failure detection and recovery via state information (i.e., architectural state), check-pointing, storing, and executing process. This is clearly shown that Bossen does teach applicant's checkpoint limitation.

Second, Fleming explicitly disclosed the fault-tolerant processing system including multiple processors and checkpointing techniques [abstract, fig. 2, col. 1, lines 1-10] comprising *a check-pointing the state information and securely storing non-deterministic event information in supporting the fault-tolerant process [col. 2, lines 44-64]*. This is intuitively shown that Fleming does teach applicant's such checkpoint limitation within the multi-thread computing architecture.

b. First, it is NOT true that the combination of Bossen and Fleming fail to address applicant's re-executing the non-deterministic events limitation. Bossen explicitly demonstrated the capability of disclose capability of *fault/error detection and correction processes via processing loading operation, executing, timing, retrying, synchronizing, checkpointing, state information retrieval, comparison, resetting, re-executing*

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operations, etc. (i.e., non-deterministic events and/or failure behaviors) in supporting the fault-tolerant/ hardware failure and recovery process [fig. 3, col. 3, lines 20-30; col. 5, lines 50-58; col. 5, lines 60-67; col. 6, lines 63-67; col. 7, lines 19-60]. In addition, Fleming explicitly illustrated the *checkpointing the state information and securely storing non-deterministic event information in supporting the fault-tolerant process [col. 2, lines 44-64]*. It is very obvious to an ordinary skill in the art that both Bossen's method and system for fault handling to improve reliability of a data processing system having leading and lagging processes via computing processing and Fleming's fault-tolerant processing system including multiple processors and check-pointing techniques do teach applicant's re-executing the non-deterministic event limitation.

Second, Fleming specifically illustrated this re-executing the non-deterministic events limitation as depicted in figures 2 and 3, col. 7, lines 60 through col. 8, lines 4. This is clearly that Fleming's fault-tolerant processing system including multiple processors and check-pointing techniques do teach applicant's event limitation.

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Third, as clearly shown in previous office action that it would have been obvious to a person having ordinary skill in the art at the time of Applicant's invention to first realizing Bossen's fault/error detection and correction processes via processing loading operation, executing, timing, retrying, synchronizing, checkpointing, state information retrieval, comparison, resetting, re-executing operations, etc... (i.e., non-deterministic events and/or failure behaviors) in supporting the fault-tolerant/ hardware failure and recovery process as being the non-deterministic events as claimed by Applicant. This is because Bossen's data/fault tolerant system explicitly performed data failure detection and recovery via state information (i.e., architectural state), checkpointing, storing, and executing process. By utilizing these capabilities, the computer hardware system can be directed or redirected promptly and functioned properly during failure process in supporting the network operation via its non-deterministic event function determination; second, by applying the checkpointing the state information and securely storing non-deterministic event information in supporting the fault-tolerant process as taught by Fleming in conjunction with the method and system for fault handling to improve reliability of a data processing system having leading and lagging processes via computing processing as

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taught by Bossen, the computing operation process within fault tolerant networking system including re-executing capability (i.e., error detection and correction) can enhance its operation performance, more specifically to ensuring the error detected, corrected, and replaced (i.e., backup) in proper and efficient manner via its checkpointing functionality. Therefore, the combination of Bossen and Fleming do explicitly teach applicant's invention.

Applicant's arguments filed 11/22/2006 have been fully considered but they are not persuasive.

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 C.F.R. § 1.136(a).

A SHORTENED STATUTORY PERIOD FOR RESPONSE TO THIS FINAL ACTION IS SET TO EXPIRE THREE MONTHS FROM THE DATE OF THIS ACTION. IN THE EVENT A FIRST RESPONSE IS FILED WITHIN TWO MONTHS OF THE MAILING DATE OF THIS FINAL ACTION AND THE ADVISORY ACTION IS NOT MAILED UNTIL AFTER THE END OF THE THREE-MONTH SHORTENED STATUTORY PERIOD, THEN THE SHORTENED STATUTORY PERIOD WILL EXPIRE ON THE DATE THE ADVISORY ACTION IS MAILED, AND ANY EXTENSION FEE PURSUANT TO 37 C.F.R. § 1.136(a) WILL BE CALCULATED FROM THE MAILING DATE OF THE ADVISORY ACTION. IN NO EVENT WILL THE STATUTORY PERIOD FOR RESPONSE EXPIRE LATER THAN SIX MONTHS FROM THE DATE OF THIS FINAL ACTION.

5. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.


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6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dieu-Minh Le whose telephone number is (571) 272-3660. The examiner can normally be reached on Monday - Thursday from 8:30 AM to 6:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Scott Baderman can be reached on (571)272-3644.

The Tech Center 2100 phone number is (571) 272-2100.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



**DIEU-MINH THAI LE
PRIMARY EXAMINER
ART UNIT 2114**

DML

01/07/06